

## **ABSTRACT OF THE DISCLOSURE**

In one aspect, the present invention is a system, a device and a method for sensing the concentration of an analyte in a fluid or matrix. The analyte may be glucose or any other chemical of interest. The fluid or matrix may be, for example, the fluid in a  
5 bioreactor, a food or agricultural product, any fluid or matrix in the body of an animal, or any other fluid or matrix whose concentration of an analyte is under investigation. In one embodiment, the analyte sensing device includes a housing having an interior space. Contained within the housing and in the interior space is one or more analyte sensing component(s). The analyte sensing component, in one embodiment, includes  
10 one or more radiation converting element(s), for example, converting chromophores. The radiation converting element(s) are capable of converting or modifying radiation of one or more wavelengths into radiation of one or more different wavelengths. The conversion efficiency of the radiation converting element(s) is at least partially dependent on the local concentration of an analyte within the analyte sensing  
15 component.